Standards and Interfaces (Future Missions) (4/01/2002)

Purpose of Study

- Define a process or set of processes whereby SEEDS can develop or adopt and evolve and maintain standards and interfaces for data and information systems and services across the Earth Science Enterprise.
- Process should capitalize on the methods and experience of existing relevant data systems standards bodies (e.g. ISO, OGC) and NASA programs (e.g. EOSDIS, ESIP Federation).
- Study must involve the ESE user community in the definition and execution of the process.

Schedule

- 04/30/02 - Publish revised survey report based on consultants review and input and discussions at community workshop.
- 05/31/02 - Develop initial set of standards and interfaces process options based on analysis of survey findings in preparation for second community workshop.
- 07/31/02 - Publish revised process options, integrating workshop results and solicit general review and comment.
- 09/30/02 - Complete study report with options, recommendations and plans.

Approach

- Form a core team with representation from the data systems and Earth science community to manage the study subtasks and integrate the results.
- Identify and enlist the aid of consultants, drawn from the community, who can contribute to specific subtasks.
- Develop an outline of survey topics and identify and survey applicable standards organizations.
- Review NewDISS Pre-formulation Document, ESIP Federation interface table, results of other study teams and other source material.
- Develop and characterize options for a SEEDS standards specification and maintenance process.
- Throughout the study tasks, publish and iterate results with the broader community via workshops and document reviews.

Status

- Good progress on survey report - revisions and additions as result of reviews are being made.
- Analysis phase to use survey to identify and characterize potential processes is underway.

Study Team Members

- **Core Team:**
  - Jean Bedet, SSAI, Study Team Coordinator
  - Helen Conover, University of Alabama, Huntsville
  - Yonsook Enloe, SGT
  - Allan Doyle, International Interfaces, Inc.
  - R. Suresh, Mayur Technologies
  - John Evans, GST
  - George Percivall, GST
- **Initial set of consultants have been identified to represent community and stakeholders and are participating in study:**
  - Jim Frew, UCSB
  - Silvia Nittel, University of Maine
  - Liping Di, GMU
  - Lola Olsen, NASA/GSFC
  - Doug Nebert, USGS/FGDC
  - Howard Diamond, NOAA
  - Chris Lynnes, NASA/GSFC DAAC
  - Doug Jaton, USGS/EDC DAAC
- **Can add consultants as recommended or as a result of participation in workshops and reviews.**

Status Update - Standards and Interfaces Process Team

- **Draft "Standards and Interfaces Survey Report" completed.**
  - Summarized activities and accomplishments of several representative ESE projects and relevant standards organizations.
    - Projects: EOSDIS Version 0, EOSDIS Core System, ESIP Federation
    - Organizations: ISO TC 211 Geographic Information/Geomatics, Open GIS Consortium, W3C, CCSDS, FGDC, IETF
  - Team members captured information in a standard format.
    - Projects: Description, Metadata Standards, Catalog Interoperability Standards, Data Access and Interoperability Standards, Data Format Standards, Data Exchange Standards, Standards in Progress and Recommendations
    - Organizations: Description, Standards Relevant to ES, Standards Work in Progress, Standards Process, Success/Failure, NASA Current Involvement and Recommendations
  - Internal review of the draft document by team and consultants is underway.
    - Have identified additional projects to include in survey such as SeaWIFS, GeoConnections/Canada, NOAA Data Server and possibly ENVISAT (not to be exhaustive but to broaden perspective).
- **Next steps:**
  - Generating list of candidate standards and interfaces to define scope of standards and interfaces to be addressed.
    - Drawing from survey report, will incorporate results of Near-Term Standards Study team and will be structured around "as is" functional architecture.
  - Developing process options that will be used to establish and evolve standards and interfaces.
    - Also drawing from the analyses of the standards processes identified in survey report.

Feedback from Community Workshop 1

- **Workshop had limited participation from general ESE community.**
  - Of those attending:
    - Mostly data providers rather than end users (although some represent both).
    - Focus on science users over applications users.
  - Community representatives who did attend were very interested in SEEDS activities and actively engaged in discussion sessions.
    - Also very familiar with projects and standards organizations that Standards and Interfaces Process Study Team had been reviewing (e.g. EOSDIS, ESIP Federation, ISO, OGC, W3C etc.).
- **Participants did share their experiences and observations on standards, standard interfaces and standards processes which generally supported topics being addressed by Study Team.**
  - Diverse and distributed set of data providers can be a barrier to access.
    - Interest in NASA data but also NOAA and other federal agency data and international and commercial data providers.
    - Strong statement that SEEDS should be addressing these broad access issues.
  - Recognized need for different classes of standards, tied to supported functions, levels of service, community agreements, etc.
    - Automated transfers from a producer to an archive would required strict interface definition and control.
    - Concept of layering - a minimum interface at basic level and layer additional capabilities.
    - Communities may choose to extend standards to meet their specific needs.
  - Encouraged the study team to carefully review lessons of other projects and organizations.

Feedback from Community Workshop 1 (cont.)

- **Community representatives helpful in identifying or reinforcing issues of concern to study team.**
  - Levels of service and associated criteria (e.g. data survivability,functionality, interoperability…) need to drive standards processes.
    - Associated costs also need to be considered in the process.
  - Deep community involvement in standards process is critical.
    - Community acceptance of the results of the process means they need to drive the process.
    - Community does not believe current efforts at engagement are sufficient.
    - Building such acceptance will not be easy and will take time and effort.
  - Definition of standards is not the only end product of a standards process.
    - User support functions required to properly document standards and provide assistance and training on using standards.
      - Training required at user and software developer level.
    - Development of new tools or modification of existing tools that make use of standards and standard interfaces must be supported by SEEDS processes.
- **Participants in breakout sessions provided useful input to general activities and approach of the formulation team.**
  - Need to convey a better description of coordination among various study teams.
    - Initially some confusion on respective focus of teams.
    - Then, many references to the interdependencies of the team's activities.
  - Community needs to and wants to be actively involved in all formulation team efforts.

Next Steps

- **Finalize survey document for public release (April 30)**
  - Good review and comments from consultants.
  - Additional sections currently being written.
  - Anticipate that survey will be a "living document" with periodic updates to capture additional material as a result of broader review and ongoing activities.
- **Study Team meeting planned for those attending the OGC meeting in DC area (April 8).**
- **Full Study Team meeting planned for late April.**
  - Focus will be on characterization and evaluation of process options.
  - Will also schedule some time with representatives of other study teams for cross-study coordination.
- **Second "Community Meeting" scheduled for June.**
  - Standards and interfaces will be a focus topic of the meeting.
  - First opportunity to share process options in open forum.